Crises, Contagion, and Coordination:
A Summary of the 2002 Philadelphia Fed Policy Forum

BY LORETTA J. MESTER

John Murray, Urban Bäckstrom, Robert Parry, and Anthony Santomero

On November 22, 2002, the Federal Reserve Bank of Philadelphia held its second annual Philadelphia Fed Policy Forum, "Crises, Contagion, and Coordination: Issues for Policymakers in the Global Economy." This event, sponsored by the Bank's Research Department, brought together a group of highly respected academics, policymakers, and market economists, for discussion and debate about issues monetary policymakers must grapple with in our increasingly global economy. The Policy Forum was not intended to be a traditional academic conference on monetary policy, nor was it intended to be a discussion of issues relevant to the next FOMC meeting. Rather, we took a longer-term perspective and tried to engage the right people in a discussion of current economic research and its implications for monetary policy. Our hope is that the 2002 Policy Forum is a catalyst for both greater understanding of today's global economy and more critical thinking about the role of policymakers in that global world.

National economies are linked through trade in goods and services, cross-border flows of financial assets, and labor migration. Economic integration strengthens these ties. Reduction of trade barriers, financial innovations, and advances in communications and information flows have increased integration. Participants at the Policy Forum discussed a number of issues that policymakers must confront in our increasingly interdependent world: the importance of institutional arrangements in maximizing the benefits of economic and financial linkages, the factors that foment crises and foster contagion, the actions policymakers can take to prevent and contain crises, and the question of whether policy should be coordinated (or not). We were reminded that policymakers' actions affect incentives: the actions a policymaker takes to ameliorate a crisis may set up conditions that raise the likelihood or the cost of the next crisis. We were also reminded that while globalization has increased the level of interrelationship among economies and markets, financial crises and contagion are not new: they have characterized economies far into the past.

Anthony M. Santomero, president of the Philadelphia Fed, began the day by pointing out that as economies and financial systems around the globe have become more closely integrated, political and economic events abroad can have important economic implications at home. Policymakers must learn to cope with the challenges faced by globalization because it is here to stay. Economists recognize the benefits to national economies that globalization offers: the promise of higher returns and a lower variance in economic perfor-

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mance than any one country could achieve on its own, the promise of more rapid output growth and higher living standards via greater exploitation of specialization and comparative advantage, and the promise of better diversification of financial risks. But at the same time, globalization has its shortcomings: greater potential for contagion and spread of economic and financial problems and reduced potency of domestic policy.

In Santomero's view, on balance, globalization is a strong positive for national economies. Policymakers can maximize the benefits and minimize the costs of global integration by creating infrastructures that allow markets to function efficiently, to contain the system in times of crisis, and to control the impact of cyclical fluctuations. Efficiency is fostered by having a legal system that establishes property rights and enforces contracts, and regulation that provides the basis for a well-functioning financial system. Policymakers should act to stabilize cyclical fluctuations and take actions that not only stabilize financial systems in time of crisis but are time consistent, so that they do not create expectations that deepen or even precipitate a crisis tomorrow. Santomero emphasized that the overarching question for policymakers as they act to strengthen markets, avoid and contain crises, and dampen business-cycle fluctuations is the degree to which effective performance requires international coordination of activities. This issue was taken up later in the day.

FINANCIAL CRISES[1]

I had the pleasure of moderating the first session, which addressed several questions that emerged throughout the rest of the day as well. Are crises the inevitable consequence of globalization? If so, what, if anything, can policymakers do to lower the probability that a crisis will occur? What can policymakers do to limit the extent and lower the costs of a crisis once it occurs? The session's papers underscored the importance of recognizing that institutional arrangements can lead to actions that exacerbate moral hazard problems and the need to focus on policies that are time consistent. Indeed, the design of the institution, including its objective function, has important effects on feasible outcomes.

For me, the session underscored the fact that policymakers often face a tradeoff between the short-run benefits of their action — namely, stemming the crisis and avoiding lost output — versus its longer run cost that could arise if the institution distorts the incentives of financial markets. An important issue is whether institutions can be designed to give policymakers the incentive to avoid the temptation of going for the short-run benefits despite their long-run cost. Another important issue is the measurement of these costs and benefits. In the midst of a crisis, how can the policymaker be sure what that tradeoff is? If intervention succeeds in stemming a crisis, it is difficult to measure the long-run costs implicit in taking the action — the cost of incentive distortion. Crisis situations are often characterized by coordination failures. What determines whether such a coordinator will emerge?

V.V. Chari of the University of Minnesota began his presentation by reviewing some of the recent research on financial crises. In Chari's view, the central feature of the data on financial crises in emerging markets is that when a crisis hits there are substantial swings in capital and output. When times are good, capital flows strongly into the country. During a crisis, capital starts flowing out dramatically, so that there is a sharp swing in the current account. Similarly, output growth turns into contraction at the time of the crisis.

One theory consistent with the data is coordination failure among debtors: if a debtholder fears that the government will default on its debt if other debtholders choose to not roll over the country's debt, then it's rational for the first debtholder not to roll over the debt either. Even though all debtholders would be better off if they agreed to the rollover (since default would be avoided), the fact that they cannot coordinate leads to a worse outcome for all.

Another theory consistent with the data involves herd behavior. There are a number of players that might contemplate investing in an emerging market, for example, investment banks or mutual funds, and each has its own information on which to base its decision. If one small group decides not to invest or withdraws its investment, the others might be deterred from investing too, reasoning that the first group might have some important, negative information. That is, the investors move in herds, which can result in capital flight. Note that this can happen even if the inference is incorrect: it could be that if the information of all the players was aggregated, it would show that investing in the country is profitable.

These theories share some common elements: there is the possibility the government will default; debtholders may fear they may be expropriated; and debtholders' property rights are insecure. Chari draws three conclusions. (1) Crises are here to stay, since these common elements are inherent in the process of emerging markets striving to become

[1] Many of the presentations reviewed here are available on our web site at www.phil.frb.org/conf/policyforum2002.html.

more developed. (2) Some mechanism for restructuring and renegotiating sovereign debt in the event of a default or a threatened default, a so-called international bankruptcy court, can serve a useful social role, since it reduces the possibility of expropriation of some debtors by others. (3) Current direct lending policies of the International Monetary Fund (IMF) that involve lending to countries when they are threatened with a crisis are socially harmful because they mean debtholders don't monitor the debt as much as they would if there were no possibility for a bailout.

Chari explains why, in his view, the logic for having a domestic lender of last resort does not carry through to the international context. The logic for a domestic lender of last resort depends on the inherent fragility of the banking system: banks lend long but borrow short. This mismatch of maturities on their balance sheets creates a coordination problem: if enough depositors start to withdraw their funds, others find it in their interest to withdraw as well, causing the bank to fail. If that failure is contagious, other banks might fail, too. The lender of last resort can stem the systemic failures of banks that would be healthy if they were not experiencing heavy withdrawals.

In the international context, governments do not have to have mismatched assets and liabilities to carry on their functions; hence, in Chari's view, an international lender of last resort that would choose which countries to bail out is not necessary. Rather, in the event of a threatened financial crisis, it would be important to provide liquidity to the entire financial system. Chari argues that the appropriate institutions for providing this liquidity already exist: central banks. Moreover, the central banks have already shown they are able to coordinate in this fashion as evidenced by their response during the Russian debt default, when the central banks of the major powers coordinated on interest rate cuts.[2]

Hyun Song Shin of the London School of Economics continued the discussion by drawing some analogies between a seldom-described crisis that occurred in Europe in 1763 and the LTCM crisis of 1998 for the purpose of extracting some policy lessons. Many commentators have emphasized the failure of sophisticated risk-management methods in precipitating the 1998 financial crisis, but as Shin points out, many of the themes are actually very old and already present in the crisis of 1763 — namely, liquidity risk and aggregate risk.

He used London's Millennium Bridge to illustrate the problem of aggregate risk. On opening day, thousands of people were walking across the bridge to christen it when a gust of wind started the bridge swaying. As the people tried to balance themselves, this caused the bridge to sway even more, which caused the people to rebalance themselves, which caused more swaying, and so on, and a bad feedback loop was created. The bridge had to be shut down for 18 months for repairs. The engineers discovered that the bridge swayed violently if people all walked at the same cadence, and the rebalancing mimicked this cadence. Should the designers have taken this into account? The odds of a thousand random people walking in step are extremely small, but once the wind started, the people were not walking at random. Their steps were no longer random events.

The analogy to the LTCM crisis is apparent. The hedge fund LTCM matched a long position with a short position in a very similar asset and made a gain on the very slight difference in returns. By leveraging this many, many times, the fund could make a high return. Other firms copied very similar trading strategies. When a shock hit, the funds had to unwind leveraged positions to meet margin calls, which moved prices against everyone that had a very similar trading position, which caused more distress, which led to more margin calls, and so on. In Shin's view, it is incorrect to think that LTCM was just unlucky. Far from a probability of zero, collapse was a near certainty, given the right conditions. When there is aggregate risk, it is not possible for everyone to hedge away their risk; someone has to be holding the residual risk.

In the 1700s, the Netherlands was a preeminent trading nation in Europe. It was capital rich but had very few investment opportunities. Prussia was an emerging market hungry for capital. Trade was facilitated using bills of exchange, which enabled a string of interconnected obligations that mimicked a loan from Amsterdam to Berlin. But these linked the balance sheets of the merchants and bankers involved. Everyone's liability was exactly matched by a claim on someone else; that is, everyone had a perfectly hedged book. But this meant there was substantial liquidity risk: when a shock hit one claimant, it affected all.

Such a shock hit in 1763 when the Seven Years War ended, causing the price of war goods to decline. As collateral values fell, banks became distressed. Merchants' asset values fell.

[2] In the question-and-answer period, Charles Goodhart of the London School of Economics said he believes Chari overstates the extent of possible central bank coordination to handle crises. Goodhart, who was on the British monetary policy committee in 1998, said that to his knowledge, there was no policy coordination in 1998.

They needed to sell more of their assets to meet their obligations, and this caused prices to fall even more, creating a negative feedback effect. Banks began to fail in Amsterdam, then in Hamburg. Because of the web of linkages, the crisis spread to Berlin, Stockholm, and Russia, resulting in a massive number of bank failures. The crisis of 1763 involved aggregate risk: counterparty risk was correlated with credit risk. The crisis of 1763 also involved liquidity risk. Instead of the usual banking story in which distress is transmitted across banks via their liabilities (deposit withdrawals), here there was asset-side contagion: as asset prices fell, other traders got into distress.

In Shin's view, one lesson from the crises of 1763 and LTCM is that we need to take endogenous risk seriously. While we need to refine our mathematical methods and statistical techniques to extract the most information we can from past data, we also have to think about how all the interested parties are interlinked. Relying on past data, no matter how sophisticated the statistical methods, is not going to capture the correct prediction. When push comes to shove, historic correlations break down and credit risk and counterparty risk will suddenly strike together. Risk is inherent in the system as a whole, so we need to take aggregate risk seriously: it is not possible for everyone to hedge themselves perfectly. When the economy itself has risk, someone has to bear that risk somewhere; the question then becomes, who should bear that risk? Shin also underscored the importance of coordination, a theme in Chari's work and an important difference between the LTCM crisis and the crisis of 1763. The New York Fed acted as a coordinator of the creditors in the LTCM crisis. In contrast, no entity played the role of coordinator in the crisis of 1763, and there were dire consequences.

FINANCIAL CONTAGION AND BUSINESS-CYCLE CORRELATION

The next session focused on the causes of contagion and how crises spread across regions of the world. Franklin Allen of the Wharton School, University of Pennsylvania, discussed how different institutional arrangements, in particular central bank and financial system arrangements, can affect the probability of contagion when financial systems are not fully integrated. Allen pointed out that most central banks today have a dual mandate of price stability and financial system stability. An exception is the European Central Bank (ECB), whose single goal is price stability. Financial stability is the responsibility of the national central banks in Europe. In Allen's view, this arrangement poses several problems. It precludes using monetary policy for financial stability aims. It makes it difficult to coordinate responses to a problem that starts in the banks in one European country but that could potentially spread to other countries. It makes it more difficult to handle contagion, since a national central bank may not internalize the problems contagion causes in other countries.

Allen's paper demonstrates the tradeoff between price stability and financial stability. Consider a world without contagion. Banks generally lend long and borrow short. If asset values fall, banks may find they have to liquidate assets early and take fire-sale losses in order to meet their obligations. A central bank can stave off the need for costly liquidations if it lends to the banking system. The money injection allows banks to meet their nominal obligations, and it also lowers the price level. In this case, financial stability and monetary stability are inconsistent. An alternative way to stem the panic is through fiscal policy: increase taxes on individuals and give the proceeds to the banks. In this case, financial stability and monetary stability are consistent.

But now consider a world with many regions whose banking systems are interlinked, and there is the possibility of contagion. Interbank markets and flexible exchange rates allow for risks — both asset risk and liquidity risk — to be shared across countries. But they also allow for the propagation of problems from one country's banking system to others if there is aggregate risk. If the central bank has the right incentives, it can correctly estimate the costs and benefits of intervening to stem the contagion. In Allen's view, the Euroland system does not have those correct incentives because: (1) the ECB, having responsibility only for price stability and not financial stability, cannot use monetary policy to ensure financial stability, and (2) the national central banks will pursue policies in their own national interests rather than in the interests of the whole group of nations; the cost-benefit calculation for intervening will be different from that for the whole group, which will lead to inefficient decision making.

Allen proposes that one way to solve this problem is to give the ECB the dual mandate of price stability and financial stability. In his view, at the present low levels of inflation that prevail in Europe, the cost of the inflation that would result from using monetary policy to stem a financial crisis would be less than the cost of a financial crisis. He also notes that the fixed exchange rate in Europe causes a large part of the problem. Flexible exchange rates would help stem contagion as long as domestic banks' liabilities are in domestic currency. A devaluation of


Kenneth Rogoff

the currency would allow banks to meet their liabilities and avoid costly liquidation of assets. Fiscal intervention could also solve the problem, but only if a single tax to bail out banks is levied across all the countries; this would entail coordination problems.

In Allen's view, a single currency area, such as the Euroland, that has separation of fiscal and monetary responsibilities has the potential problem of contagion: a small shock in one place can become a big problem everywhere. He urged that the creation of an integrated financial system in the Euro area be hastened, since that would ensure risk sharing across countries and financial stability from monetary policy or fiscal intervention in the same way as when there is a single country.

If we are to devise policies and institutions to try to prevent this type of contagion and systemic crises, it is important to know the causes of contagion and the channels through which a shock in one country can spill over and be transmitted to others. **Graciela Kaminsky** of George Washington University reviewed some of her recent work in this area, examining spillovers that occur in a matter of days or hours in countries with established financial systems. Kaminsky used daily data on stock market returns in the 1990s to measure turmoil as stock market returns in the tail of the distribution. Thus, very large decreases or declines in stock returns that occur in countries on the same day are evidence of spillovers. Kaminsky's results suggest that spillovers have regional characteristics. There was spillover across the countries of Asia in 1997, but not later in the 1990s. There was no spillover of turmoil from Asia to Europe in 1997, but in 1998, the sharp movements in the stock markets of Europe occurred on the same days. In Latin America, there were spillovers across countries in early 1999. Sometimes spillovers are worldwide, as they were in the fall of 1998. Often, when a financial-center country, for example, the U.S. or Germany, experiences turmoil, it is transmitted to the rest of the world. Problems occur synchronously in many emerging markets but generally only when a shock in one of them first influences a financial center.

In looking at crises over the past 200 years, Kaminsky noted (as had Chari earlier) that crises that entail contagion generally are preceded by a surge in capital flows. Once the shock hits, there is a sudden reversal of capital flows, then the crisis spreads through the world. Contagion does not occur when there is no activity in international financial markets or when there is a small amount of international lending.

Kaminsky distinguishes crises that are anticipated from those that are a surprise. The damage is much larger from an unanticipated crisis because there is no time for lenders to rebalance their portfolios ahead of the crisis. The crises in Mexico, Thailand, and Russia were not anticipated: these countries' sovereign debt had not been downgraded by Standard and Poor's in the 12 months before the crisis, and some were even upgraded. In contrast, the crises in Brazil, Turkey, and Argentina were anticipated: their debt was downgraded consistently in the months going into the crisis. This allowed investors and creditors to hedge some of their risk and scale back their exposure, thereby limiting the damage.

In Kaminsky's view, there is no clear solution to contagion and spillovers that happen very quickly. One can impose controls on capital mobility, but it is impossible to avoid capital flight.

POLICY COORDINATION AND MONETARY POLICY DURING A CRISIS

Our third session concerned policy coordination and appropriate monetary policy in a crisis, a theme that ran through the first two sessions. In a world in which goods and financial markets are becoming increasingly interlinked, are problems created when each country sets its own monetary policy? Are stabilization gains from having separate currencies dissipated if monetary policies are not coordinated? According to **Kenneth Rogoff** of the International Monetary Fund and Harvard University, the answer is no. Rogoff's research suggests that, in most cases, the gains from monetary policy coordination are relatively small compared with the gains obtained if each central bank pursues an optimal monetary policy for macroeconomic stabilization in its respective country. That is, typically, the biggest gains are from getting your own house in order. Although the gains to international policy coordination would not be that large among the U.S., Europe, and Japan, little research has been done on the spillover effects to the rest of the world. For example, exchange rate volatility does not have first-order effects on these three areas, but it

could be significant to the rest of the world.

Rogoff emphasized that one cannot meaningfully discuss international monetary coordination in the absence of the underlying fiscal policy framework in the countries in question. Monetary policy cannot cure all the problems caused by poor fiscal policy, and a poor fiscal situation can limit the effectiveness of monetary policy. He notes that the welfare effects of alternative policies will differ, depending on the underlying distortions in the economy, for example, wage rigidities or nonoptimal tax systems. In closing, Rogoff pointed out that the exchange of ideas among central bankers, which one might characterize as a type of coordination, is valuable, since countries often face similar economic problems and issues.

Martin Eichenbaum of Northwestern University continued the discussion of the links between monetary and fiscal policy, focusing on the fiscal implications of banking and currency crises, the so-called twin crises. According to the classical view, currency crises arise when the government prints money to finance ongoing or prospective government deficits. These prospective government deficits might be caused by the costs of resolving a banking crisis, which can be very large. For example, the resolution costs of the Indonesian banking crisis have been estimated at over 60 percent of Indonesia's GDP. Indeed, three effects can raise the costs of resolving a banking crisis. A currency crisis that results in a devaluation of the country's currency raises the cost of resolving a banking crisis by reducing the residual value of banks, which typically have dollar liabilities and local currency assets and are unhedged. In addition, twin crises are typically followed by recessions in which tax revenues fall, exacerbating the fiscal implications of twin crises. Finally, there is a relative price effect. When the local currency depreciates, the dollar value of tax receipts falls. If this drop outweighs the drop in value of government spending on nontradable goods, this worsens the government's fiscal situation.

But there are two problems with the classical view of currency crises. First, it implies that inflation rates would be high after a currency crisis, but in reality, many crises are followed by moderate inflation rates. Second, it emphasizes the role of seignorage as an important source of government finance, but in reality, seignorage provides a limited amount of revenue.

A key insight from Eichenbaum is that printing money to generate seignorage is only one of the ways a government can pay for the fiscal costs of a twin crisis, and the method chosen will have implications for the post-crisis inflation rate. This recognition allows models of twin crises to be reconciled with the data. In addition to seignorage, the government could finance a banking system bailout by using explicit fiscal reform of raising taxes or cutting spending; deflating the real value of outstanding nonindexed nominal debt; using implicit fiscal reform of reducing the real value of government transfer commitments (for example, social security payments) that aren't fully indexed to foreign currency; defaulting on outstanding debt; and/or receiving an international bailout.

All of the methods of paying for the crisis, except for explicit default or explicit fiscal reform, require a depreciation of the currency — the government would need to abandon a fixed exchange rate regime to gain access to these revenues — and they involve some inflation. But the exact amounts depend on the mix of financing strategies used. If there is a significant depreciation of the country's currency to pay for the crisis, the post-crisis inflation rate need not be as high as when the country prints money to finance the costs of resolution. Eichenbaum concluded with a case study of the Korean twin crisis, showing that an extension of the model to include various methods of financing allows it to fit the data. It remains for future research to determine what leads different countries to adopt different financing strategies and what the welfare implications of those alternatives are.

Lawrence Christiano of Northwestern University turned the discussion to how a central bank should manage a financial crisis, such as the Asian crisis of 1997-98, in which the value of the country's currency is collapsing, there's a sharp reversal from capital inflows to outflows, and the domestic economy is falling into a recession. Consider a country that is borrowing in domestic currency to pay for labor and in international markets for foreign currency to purchase a foreign intermediate input. A crisis is triggered by collateral constraints suddenly becoming binding: firms need to borrow but the value of their assets does not permit them to borrow more. What's a central bank to do?


Martin Eichenbaum

One view, which Christiano characterized as the Krugman-Stiglitz view, advocates that the central bank cut interest rates, since the economy is falling into a recession. The interest-rate cut causes a reduction in the real interest rate used to discount future flows, so asset prices rise. If asset prices rise enough, the collateral constraint becomes less binding, firms can finance more of the intermediate input, and output can expand. An alternative view, which Christiano characterized as the IMF view, advocates against cutting interest rates in order to help stem capital flight. If the country cuts its domestic interest rate, its currency will depreciate and the value of a firm's assets in foreign currency will fall; hence, its purchases of the intermediate input must fall. Production contracts, and the economy may enter a recession.

Which is correct? The key is how asset prices respond to a cut in interest rates. Christiano's research suggests that that depends on how open the country's economy is, that is, how flexible its prices and factors of production are. Any relaxation in the collateral constraint makes it easier to bring in the foreign input, and if it is easy to move factors around, the foreign input can be combined with capital and labor and immediately be put to productive use. This, in turn, raises asset prices and the marginal product of capital. In this type of flexible economy, cutting the domestic interest rate in the face of a crisis is the better thing to do. But if the economy is inflexible, it cannot move its factors of production around very much, so the increase in the foreign input, which occurs when the collateral constraint is relaxed, cannot be put to productive use, so asset prices do not rise. In this case, cutting rates would be counterproductive; it would intensify the capital outflow but not raise asset values. Christiano's latest research suggests that in an economy in which resources are inflexible in the short run but flexible in the long run, the optimal strategy in the face of a crisis is to raise interest rates in the short run to stem capital flight but to lower rates in the long run. This appears to be what happens in crisis economies.

POLICYMAKING IN A GLOBAL CONTEXT

Our final session brought together a panel of international policymakers to discuss the practical aspects of implementing monetary policy in a global context. **Robert Parry**, president of the Federal Reserve Bank of San Francisco, made the point that in setting monetary policy, the Federal Reserve's primary focus is on the U.S. economy and its goals remain maximum sustainable output and employment and price stability. The integration of goods and financial markets has made conditions in other countries more prominent in the Fed's deliberations, but for the most part, the effects on policymaking are at the margin; globalization has not severed the connections between monetary policy and the U.S. economy.


Graciela Kaminsky

In Parry's view, globalization has not changed the goals or conduct of U.S. monetary policy to any great extent. This is because foreign events rarely have a large effect on the U.S. economy, since: (1) our economy is large so shocks in foreign economies matter less for us than for smaller countries, (2) there is still a substantial home bias in our demand for goods, services, and assets, so changes in foreign demand have only a small effect on aggregate demand in the U.S., and (3) our flexible exchange rate regime allows us to use interest rates to conduct monetary policy. But there have been a few instances when U.S. monetary policy has responded to foreign developments, for example, during the global financial crises of the late 1990s.

Parry also made the point that growing interdependence of national economies makes it increasingly important to pay attention to the actions of foreign policymakers, and he agreed with Rogoff that there is value in the formal and informal meetings that Federal Reserve staff members have with the staffs of other central banks around the world. Such information exchange enables the Fed to better forecast global economic conditions that affect the U.S. economy. The meetings also allow officials to get to know one another so that if an event occurs in which cooperation is needed, it is easier to effect. Parry said that agreements to coordinate monetary policy actions do not typically occur at such meetings. On the other hand, there is a great deal of coordination of regulatory policy in financial markets in recognition of the fact that problems in one country's financial sector can be quickly transmitted to other countries' financial systems through debt defaults or contagion.

John Murray, adviser to the governor of the Bank of Canada, concurred that running independent monetary policies across countries has benefits. According to Murray, the Bank of Canada has a skeptical attitude toward policy coordination, even though economies have become

more integrated and there have been a series of crises. He agreed with Rogoff that policy coordination may be good in concept, but that in practice, it is better for central bank policymakers to focus on their own domestic objectives. This, despite that fact that in contrast to the U.S., Canada is a small, open economy.

Canadian monetary policy operations are guided by three precepts: the importance of keeping your own house in order with respect to price stability and full-employment growth; the importance of transparency and credibility to eliminate unnecessary uncertainty and doubt; and the importance of a flexible exchange rate, which helps insulate the economy from external shocks. In periods of extreme instability, international coordination may offer some gain, but in Murray's view, good domestic policies should help keep these occurrences to a minimum.

Urban Bäckstrom, governor of the Central Bank of Sweden, endorsed Murray's statements and went on to discuss how central bankers can go about putting their houses in order. He believes that central bankers have made much progress in focusing on price stability and increasing transparency and that their next major issue will be financial stability. What can policymakers do to mitigate financial cycles? As Bäckstrom explained it, financial cycles would seem to evolve from excessive optimism: credit expansion feeds into asset prices, lowering the cost of capital, which stimulates investment and leads to an economic boom. Eventually, the investments are found not to be sustainable, since they do not generate profits, and the structure collapses. The economy moves from boom to bust, and there may be banking and/or currency crises.

Bäckstrom said two conventional pieces of policy advice for central bankers in preventing financial cycles are moral suasion and prudential regulation. Central bank policymakers might warn market participants they are becoming overly optimistic in their expectations about future cash flows. While such moral suasion may be worth a try, Bäckstrom is skeptical that a market can be talked down when it is rushing to new heights. There are also problems with prudential regulation. In Bäckstrom's view, most financial crises stem not from individual banks' getting into difficulties and affecting others by contagion but from many institutions' acting similarly. Also, prudential regulation is based on perceptions of risk, which are not independent of the credit and asset-price cycle itself. Apparent risk declines as collateral values rise during the upturn in the cycle, even though actual risk builds up as the expansion and leverage continues. Bank supervisors are aware of this problem and are trying to address it, but for Bäckstrom, whether improved prudential regulation, supervisory practices, and risk-management techniques will be enough to avoid financial cycles in the future is an open question.

Bäckstrom would like researchers to explore the possible use of monetary policy in preventing large financial cycles, noting that price stability is not, by itself, sufficient to ensure financial stability. There is little to prevent the emergence of cycles in the prices of real and financial assets that are not included in the measure of inflation. He acknowledged that there are arguments against a central bank's trying to respond to changes in asset prices that do not lead to inflation in the prices of goods and services (for example, how does the central bank know that a bubble is a bubble and not a reflection of fundamentals?) and that a central bank should not target asset prices per se. But he proposed that the central bank be observant when notable increases in assets prices are one of several imbalances building up in the economy, even when inflation is contained. Bäckstrom said he considers the use of monetary policy in trying to prevent financial cycles to be consistent with the central bank's mandate to achieve long-run price stability.

SUMMARY

The 2002 Policy Forum generated lively discussion among the program speakers and audience participants on a number of issues that policymakers must confront in this increasingly interdependent world. Our hope is that the ideas raised will spur further research and foster a greater understanding of today's global economy.

We will hold our third annual Philadelphia Fed Policy Forum, "Managing the Recovery in Uncertain Times," on November 14, 2003. You will find the agenda on page 17.